

REMARKS/ARGUMENTS

In view of the foregoing amendments and the following remarks, the applicants respectfully submit that the pending claims are not anticipated under 35 U.S.C. § 102 and are not rendered obvious under 35 U.S.C. § 103. Accordingly, it is believed that this application is in condition for allowance. If, however, the Examiner believes that there are any unresolved issues, or believes that some or all of the claims are not in condition for allowance, the applicants respectfully request that the Examiner contact the undersigned to schedule a telephone Examiner Interview before any further actions on the merits.

The applicants will now address each of the issues raised in the outstanding Office Action.

Objections

The title was objected to as not being descriptive. The title has been amended to be more clearly indicative of the claimed invention. Therefore, the applicants respectfully request that the Examiner reconsider and withdraw this objection.

Rejections under 35 U.S.C. § 102

Claims 1-8, 12-14, 16, 18-22, 24-26 and 28-32 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,256,529 ("the Holupka patent"). The applicants respectfully request that the Examiner

reconsider and withdraw this ground of rejection in view of the following.

Claims 1-8, 12-14, 16 and 18

Independent claims 1 and 4, as amended, are not anticipated by the Holupka patent because the Holupka patent does not teach an ultrasonic diagnosing apparatus comprising position detecting means for ***detecting three dimensional position information of plural tomographic images obtained in a process that the ultrasonic probe moves within a body cavity of a body to be examined.*** (An example of this feature is illustrated by Figs. 1 and 2, elements 27, 35, 44, and 43, and described in pages 16 and 17 of the present application.)

The Holupka patent merely teaches an ultrasonic probe with a probe holder wherein the probe holder includes a digital encoder for determining position information of ultrasonic image planes relative to each other, wherein the ultrasonic image planes are spatially arranged parallel to each other centered and orthogonal to the axis of the ultrasonic probe. (See, e.g., Figs. 1A, 1B, 5A, and 5B; and col. 5, lines 19-27 of the Holupka patent.) Thus, in the Holupka patent, the probe moves in a ***linear, not a three dimensional path, and does not detect three dimensional position information.*** That is, the position detector (longitudinal positioner) of the ultrasonic diagnostic apparatus of the Holupka patent is one of one-dimension, not three-dimension.

The Holupka patent has certain problems overcome by embodiments consistent with the claimed invention. Specifically, the Holupka patent, the ultrasonic

transducer can move only linearly. On the other hand, the stomach, esophagus and bowels discussed on page 3 of the specification of the above-captioned patent application are not linear. Consequently, the ultrasonic diagnostic apparatus of the Holupka patent cannot be used for examining these organs. On the other hand, embodiments consistent with the claimed invention can be used for examining these organs.

Thus, independent claims 1 and 4 are not anticipated by the Holupka patent for at least the foregoing reason. Since claims 2 and 3 depend from claim 1, and since claims 5-8, 12-14, 16 and 18 directly or indirectly depend from claim 4, these claims are similarly not anticipated.

In addition, dependent claims 6 and 7 are not anticipated by the Holupka patent because the Holupka patent does not teach an ultrasonic diagnostic apparatus comprising display means displaying the ultrasonic tomographic image and the tomographic parallel images on one screen so as to compare them wherein, the display means displays on the tomographic parallel images an ultrasonic tomographic ***image marker indicating a position of the ultrasonic tomographic image along the non-linear scanning path.*** An example of this feature is illustrated by Figs. 8 and 9, elements 53, 54 and 55 of the present application. The section(s) of the Holupka patent cited by the Examiner as teaching this feature merely discloses position detecting means providing position information of ultrasonic image planes relative to each other. (See Col. 5, lines 19-27 of the Holupka patent.)

Thus, dependent claims 6 and 7 are not anticipated by the Holupka patent for at least this additional reason.

Since claim 8 depends from claim 7, it is similarly not anticipated.

In addition, dependent claim 12 is not anticipated by the Holupka patent because the Holupka patent does not teach an ultrasonic diagnostic apparatus, wherein the display means ***displays*** the tomographic parallel images and ***an indicator indicating a direction of*** the tomographic parallel images with respect to the position and direction detecting means. An example of this feature is illustrated by Fig. 11, elements 53, 55, and 56, and described in pages 37 and 38 of the present application. The section(s) of the Holupka patent cited by the Examiner as teaching this feature merely discloses position detecting means providing position information of ultrasonic image planes relative to each other, as well the capability of the ultrasonic apparatus to display three prospective views taken from a user specified location. (See Col. 5, lines 19-27; Col. 6, lines 30-41; and Figs. 1A and 5A of the Holupka patent.) Thus, dependent claim 12 is not anticipated by the Holupka patent for at least this additional reason.

Claims 19-22, 24-26 and 28-32

Independent claim 19, as amended, is not anticipated by the Holupka patent because the Holupka patent does not teach an ultrasonic diagnosing apparatus moving an ultrasonic transducer within a body cavity of a body to be examined and creating plural chronological tomographic

images in accordance with the movement, the apparatus comprising ***an auxiliary image creating means for creating an auxiliary image indicating position information of the tomographic images along a non-linear path of the movement of the ultrasonic transducer based on three dimensional position information.*** (An example of this feature is illustrated in Figs. 21 - 25, and is described on pages 69 - 74 of the present invention.) The section(s) of the Holupka patent cited by the Examiner as teaching this feature merely discloses position detecting means providing position information of ultrasonic image planes relative to each other. (See Col. 5, lines 19-27 of the Holupka patent.) That is, motion of the ultrasonic transducer in the diagnostic apparatus of the Holupka patent is linear, not non-linear. Thus, claim 19 is not anticipated by the Holupka patent for at least the foregoing reason. Since claims 20-22, 24-26 and 28-32 directly or indirectly depend from claim 19, these claims are similarly not anticipated by the Holupka patent.

As already mentioned above, the Holupka patent has certain problems overcome by embodiments consistent with the claimed invention. Specifically, the Holupka patent, the ultrasonic transducer can move only linearly. On the other hand, the stomach, esophagus and bowels discussed on page 3 of the specification of the above-captioned application are not linear. Consequently, the ultrasonic diagnostic apparatus of the Holupka patent cannot be used for examining these organs. On the other hand, embodiments consistent with the claimed invention include means for generating an auxiliary image to indicate information of the position of a tomographic image along a "non-linear path." Consequently, such embodiments

consistent with the claimed invention can be used for the foregoing organs.

In addition, dependent claim 21 is not anticipated by the Holupka patent because the Holupka patent does not teach an ultrasonic diagnosing apparatus wherein the auxiliary image creating means creates the auxiliary image including a plate-like ultrasonic image marker expressing a position and direction of the tomographic image. An example of this feature is illustrated by Figs. 24 and 25, elements 161a-161e, and described on page 72 of the present application. The section(s) of the Holupka patent cited by the Examiner as teaching this feature merely discloses position detecting means providing position information of ultrasonic image planes relative to each other, wherein each image plane is associated ("tagged") with such position information. (See Col. 5, lines 19-27 of the Holupka patent.) Thus, dependent claim 21 is not anticipated by the Holupka patent for at least this additional reason.

In addition, dependent claim 22 is not anticipated by the Holupka patent because the Holupka patent does not teach an ultrasonic diagnosing apparatus wherein the display control means causes display of the auxiliary image and a tomographic image corresponding to the auxiliary image on the same screen. An example of this feature is illustrated by Figs. 24 and 25, and is described on page 74 - 76 of the present application. The section(s) of the Holupka patent cited by the Examiner as teaching this feature merely disclose and illustrates an ultrasonic probe capable of capturing a

number of ultrasonic image slices parallel to each other, wherein the ultrasonic apparatus has display means capable of displaying the number of ultrasonic image slices parallel to each other. (See Fig. 1A, element 16, and Fig. 5A of the Holupka patent.) Thus, dependent claim 22 is not anticipated by the Holupka patent for at least this additional reason.

In addition, dependent claim 25 is not anticipated by the Holupka patent because the Holupka patent does not teach an ultrasonic diagnosing apparatus wherein the auxiliary image creating means creates the auxiliary image by synthesizing the plural ultrasonic image markers and a locus marker of the ultrasonic transducer, which is created by sequentially connecting the ultrasonic image markers. An example of this feature is illustrated by Fig. 24, elements 161 and 163, and is described on pages 72-73 of the present application. The sections(s) of the Holupka patent cited by the Examiner as teaching this feature merely discloses position detecting means providing position information of ultrasonic image planes relative to each other, as well as the capability of the ultrasonic apparatus to display three prospective views taken from a user specified location. (See Col. 5, lines 19-27; Col. 6, lines 30-41; and Figs. 1A and 5A of the Holupka patent.) Thus, dependent claim 25 is not anticipated by the Holupka patent for at least this additional reason.

In addition, dependent claim 26 is not anticipated by the Holupka patent because the Holupka patent does not teach an ultrasonic diagnosing apparatus wherein the

auxiliary image creating means superimposes a direction marker indicating a specific direction of a corresponding tomographic image on the ultrasonic image marker. An example of this feature is illustrated by Fig. 24, elements 162a-162e, and is described on pages 72-73 of the present application. The section(s) of the Holupka patent cited by the Examiner as teaching this feature merely discloses position detecting means providing position information of ultrasonic image planes relative to each other. (See Col. 5, lines 19-27 of the Holupka patent.) Thus, dependent claim 26 is not anticipated by the Holupka patent for at least this additional reason.

In addition, dependent claim 28 is not anticipated by the Holupka patent because the Holupka patent does not teach an ultrasonic diagnosing apparatus wherein the auxiliary image creating means creates the auxiliary image including the plural ultrasonic image markers arranged along a path of movement of the ultrasonic transducer, and makes a display form of the ultrasonic image marker corresponding to the tomographic image displayed for comparison among the plural ultrasonic image markers different from a display form of the other ultrasonic image markers. An example of this feature is illustrated by Fig. 25, element 161e, and is described on page 74 of the present application. The section(s) of the Holupka patent cited by the Examiner as teaching this feature merely discloses position detecting means providing position information of ultrasonic image planes relative to each other, as well as the capability of the ultrasonic apparatus to display three prospective views taken from a user specified location. (See Col. 5, lines

19-27; Col. 6, lines 30-41; and Figs. 1A and 5A of the Holupka patent.) Thus, dependent claim 28 is not anticipated by the Holupka patent for at least this additional reason.

In addition, dependent claim 29 is not anticipated by the Holupka patent because the Holupka patent does not teach an ultrasonic diagnosing apparatus further comprising input means instructing changing a tomographic image to be displayed among the plural tomographic images recorded in the recording means, wherein the auxiliary image creating means changes the ultrasonic image marker to a different display form in connection with a change in the tomographic image to be displayed. An example of this feature is illustrated, for example, by Fig. 27, element 161d, and is described on pages 77 - 80 of the present invention. The section(s) of the Holupka patent cited by the Examiner as teaching this feature merely discloses position detecting means providing position information of ultrasonic image planes relative to each other as well as the capability of the ultrasonic apparatus to display three prospective views taken from a user specified location. On each of the three views, a user may define contours having a number of attributes (such as name and color) that are user selectable. (See Col. 5, lines 19-27; Col. 6, lines 30-41, and lines 47-63; and Figs. 1A and 5A of the Holupka patent.) Thus, dependent claim 29 is not anticipated by the Holupka patent for at least this additional reason.

In addition, dependent claim 31 is not anticipated by the Holupka patent because the Holupka patent does not teach an ultrasonic diagnosing apparatus comprising input means instructing changing a direction of displaying the auxiliary image, wherein the auxiliary image creating means changes a direction of displaying the auxiliary image as well as the marker indicating the coordinates system based on the instruction from the input means. An example of this feature is illustrated by Fig. 29, elements 162d, 161d, and 160 and Fig. 30, elements 161e, 162e, and 160, and is described on pages 83 - 87 of the present invention. The section(s) of the Holupka patent cited by the Examiner as teaching this feature merely discloses position detecting means providing position information of ultrasonic image planes relative to each other, as well as the capability of the ultrasonic apparatus to display three prospective views taken from a user specified location. On each of the three views, a user may define contours having a number of attributes (such as name and color) that are user selectable. (See Col. 5, lines 19-27; Col. 6, lines 30-41, and lines 47-63; and Figs. 1A and 5A of the Holupka patent.) Thus, dependent claim 31 is not anticipated by the Holupka patent for at least this reason.

In addition, dependent claim 32 is not anticipated by the Holupka patent because the Holupka patent does not teach an ultrasonic diagnosing apparatus wherein the position information detecting means calculates the position information based on a coordinates system with reference to a body to be examined. An example of this

feature is illustrated by Fig. 33, elements 170 and 171, and is described on pages 90-92 of the present application. On the other hand, in the Holupka patent, the position information is determined with reference to an implant template. (See Figure 1A.) Thus, dependent claim 32 is not anticipated by the Holupka patent for at least this additional reason.

Rejections under 35 U.S.C. § 103

Claims 15 and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the Holupka patent. The applicants respectfully request that the Examiner reconsider and withdraw this ground of rejection in view of the following.

These claims depend from claim 4. The purported commercially available systems do not compensate for the deficiencies of the Holupka patent with regard to claim 4, as amended (discussed above), regardless of whether or not one skilled in the art would have been motivated to combine them as proposed by the Examiner. Thus, dependent claims 15 and 17 are not rendered obvious by the Holupka patent for at least this reason.

Amendments to the Specification

The specification has been amended to correct a number of minor errors.

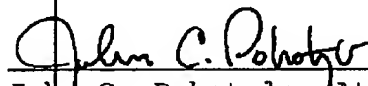
Conclusion

In view of the foregoing amendments and remarks, the applicants respectfully submit that the pending claims are in condition for allowance. Accordingly, the applicants request that the Examiner pass this application to issue.

Any arguments made in this amendment pertain **only** to the specific aspects of the invention **claimed**. Any claim amendments or cancellations, and any arguments, are made **without prejudice to, or disclaimer of**, the applicants' right to seek patent protection of any unclaimed (e.g., narrower, broader, different) subject matter, such as by way of a continuation or divisional patent application for example.

Respectfully submitted,

April 4, 2008



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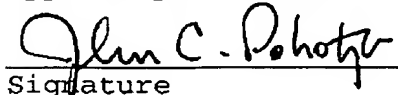
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